Fig. 1

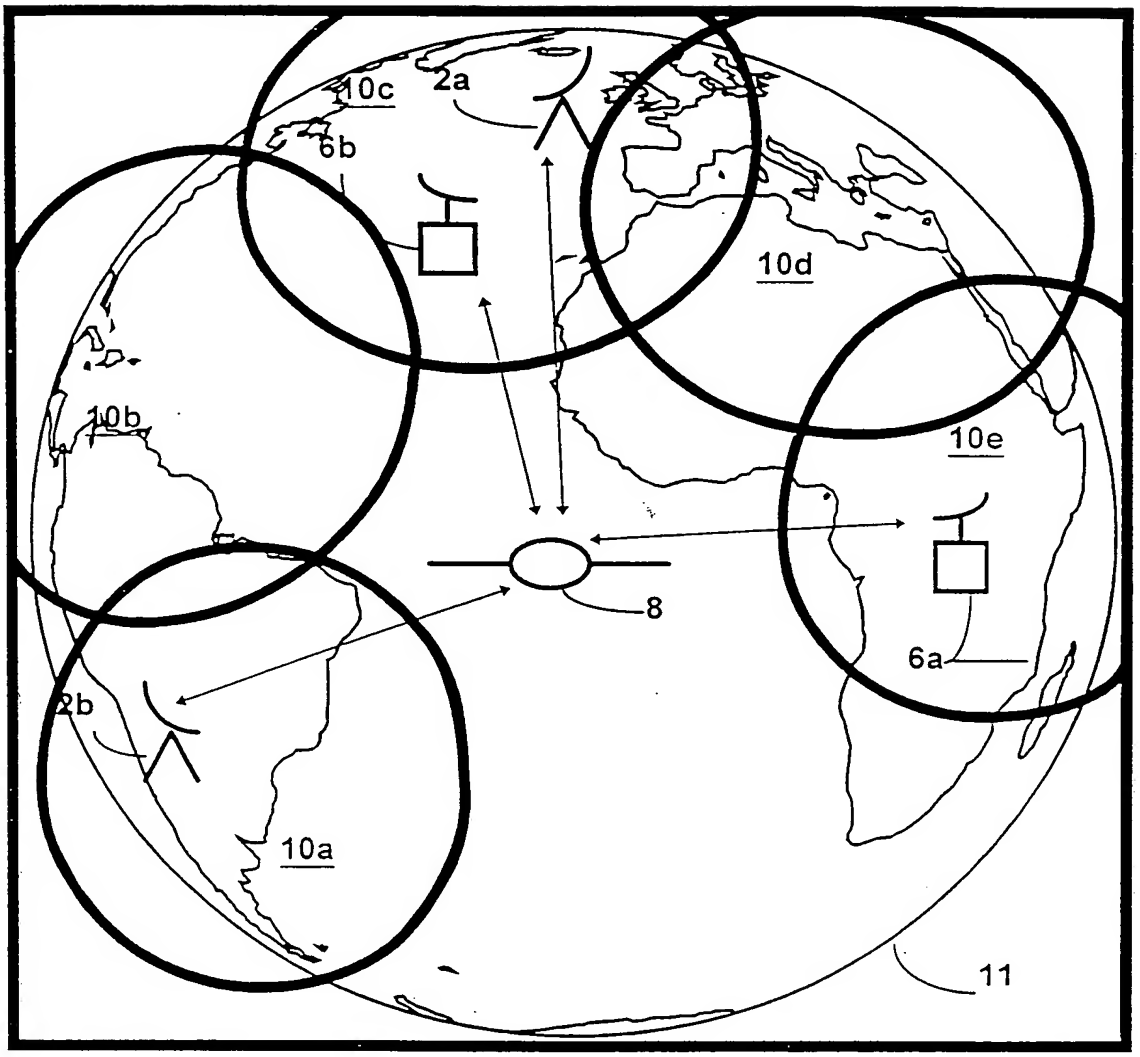
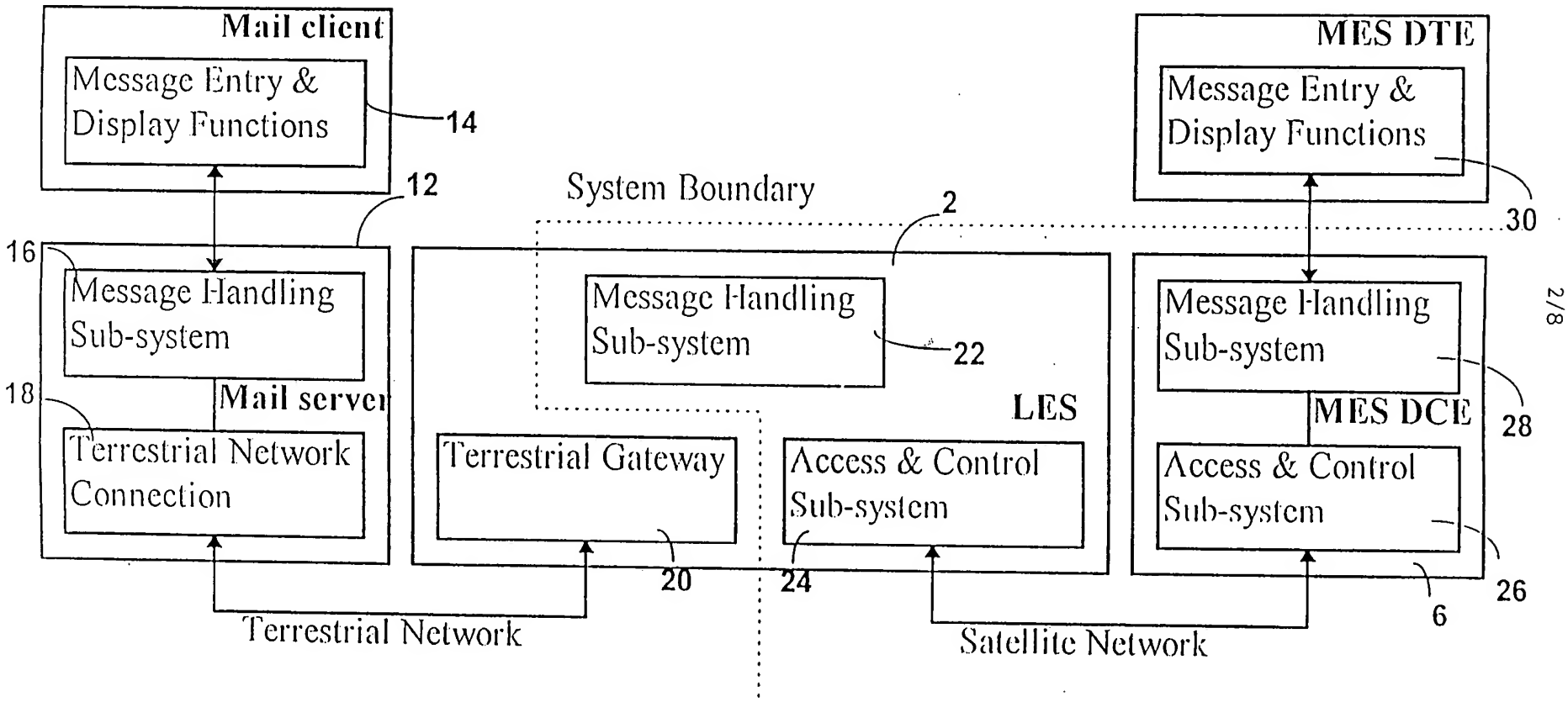


Fig. 2


Mail client
Message Entry & Display Functions
14
12
16
Message Handling Sub-system
18
Mail server
Terrestrial Network Connection
System Boundary
2
Message Handling Sub-system
22
LES
Terrestrial Gateway
20
Access & Control Sub-system
24
MES DTE
Message Entry & Display Functions
30
Message Handling Sub-system
28
MES DCE
Access & Control Sub-system
26
6
Terrestrial Network
Satellite Network

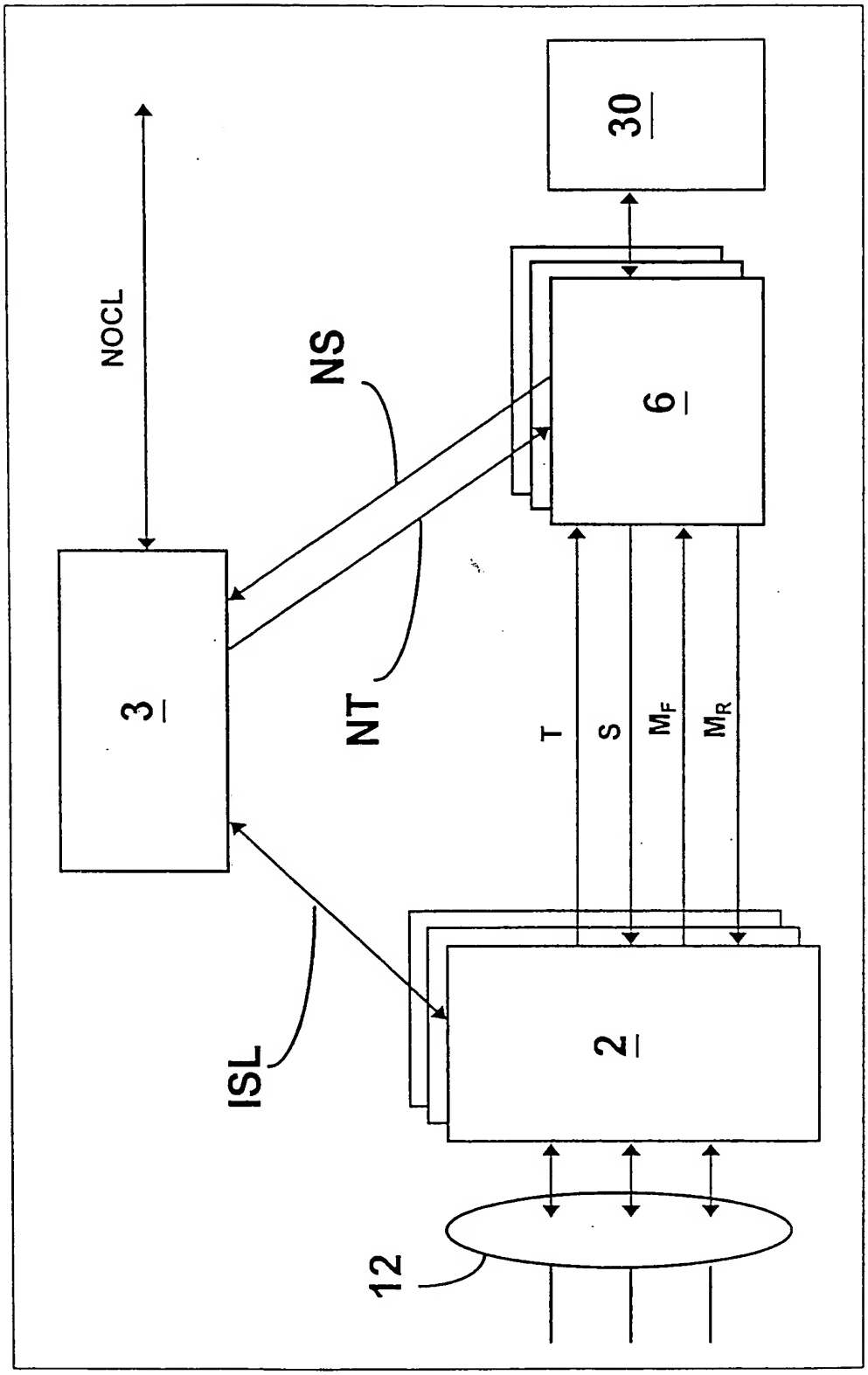


Fig. 3

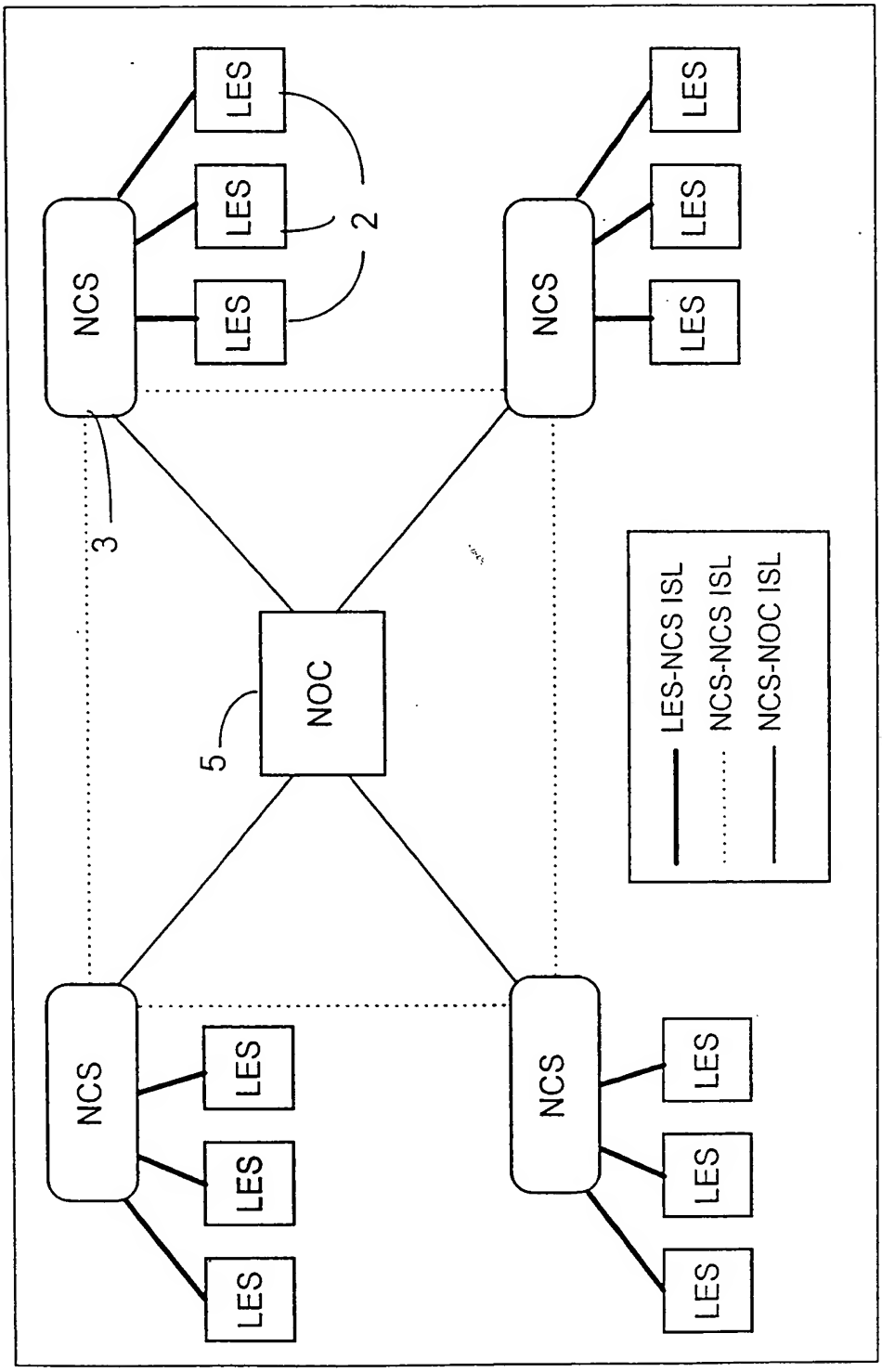

NCS
NCS
NCS
NCS
NOC
LES
LES
LES
LES
LES
LES
LES
LES
LES
LES
LES
LES
2
3
5
LES-NCS ISL
NCS-NCS ISL
NCS-NOC ISL

Fig. 4

Fig. 5

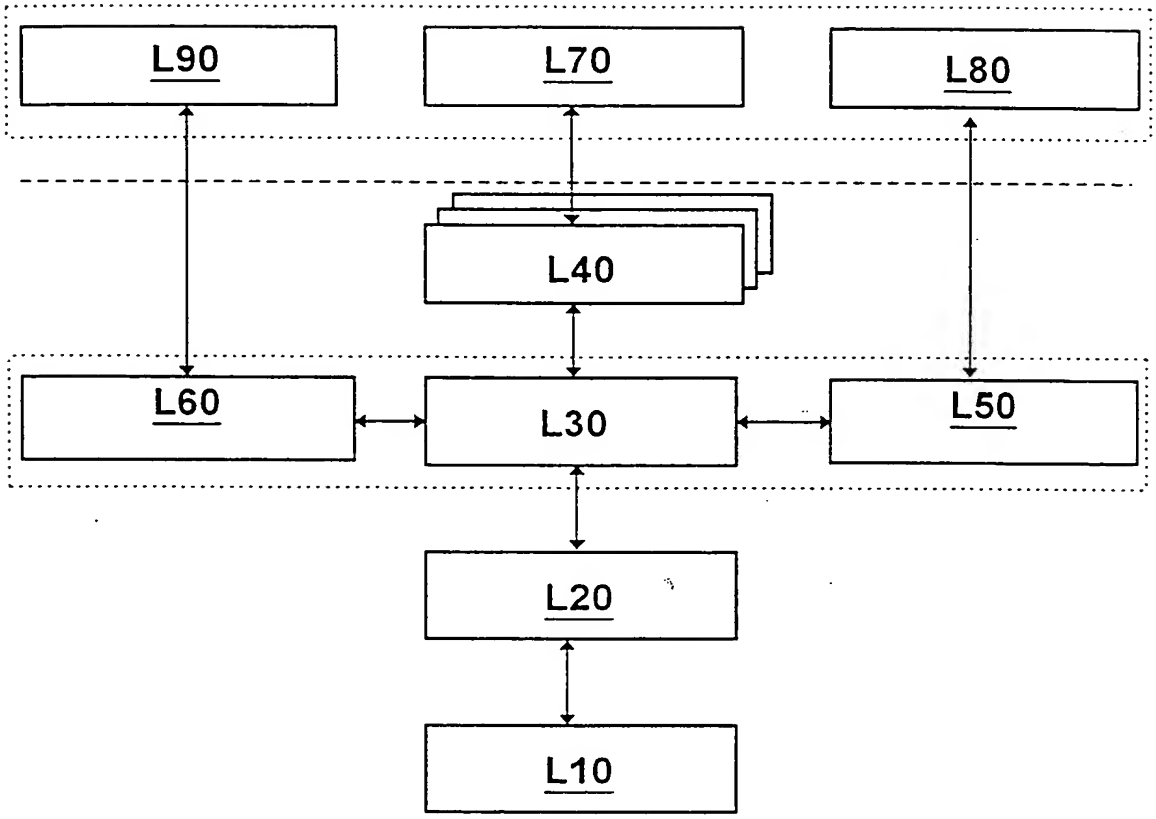


Fig. 6

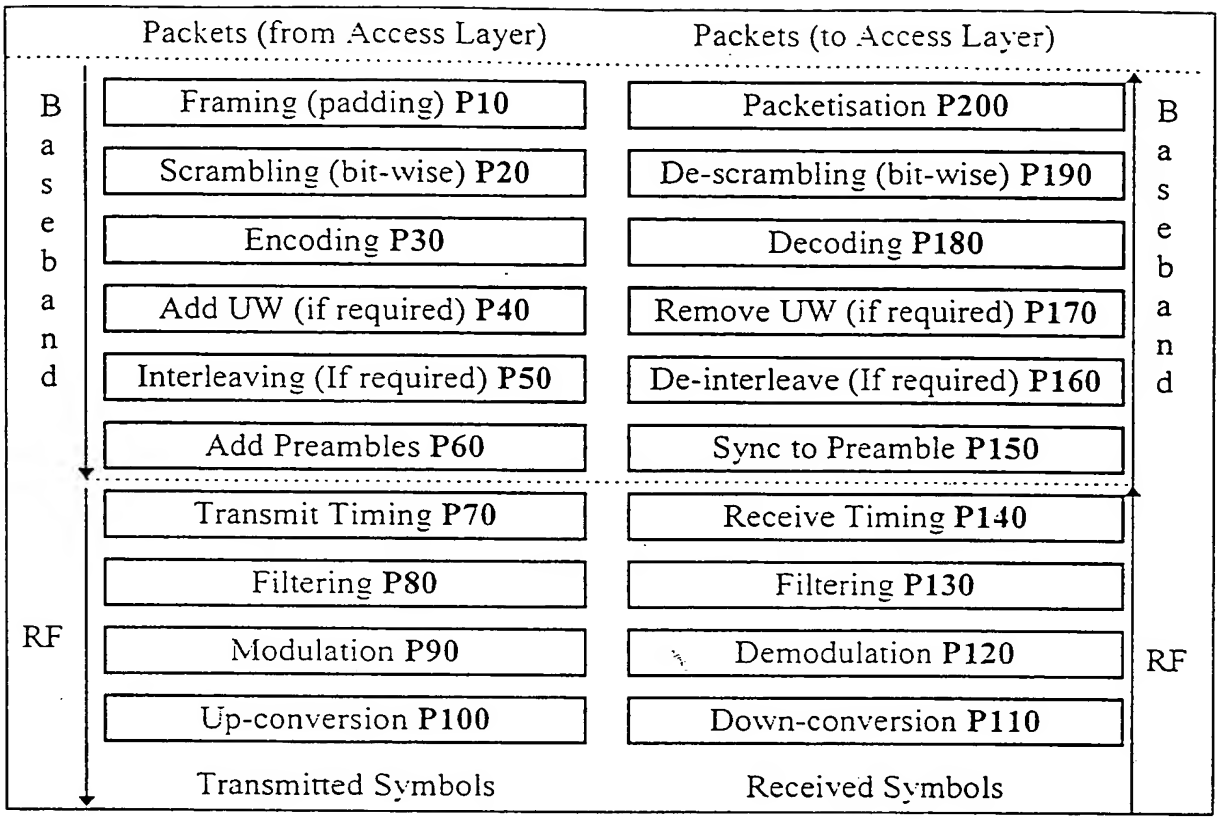

Packets (from Access Layer)
Packets (to Access Layer)
Baseband
Framing (padding) P10
Scrambling (bit-wise) P20
Encoding P30
Add UW (if required) P40
Interleaving (If required) P50
Add Preambles P60
Packetisation P200
De-scrambling (bit-wise) P190
Decoding P180
Remove UW (if required) P170
De-interleave (If required) P160
Sync to Preamble P150
Baseband
RF
Transmit Timing P70
Filtering P80
Modulation P90
Up-conversion P100
Receive Timing P140
Filtering P130
Demodulation P120
Down-conversion P110
RF
Transmitted Symbols
Received Symbols

Fig. 7

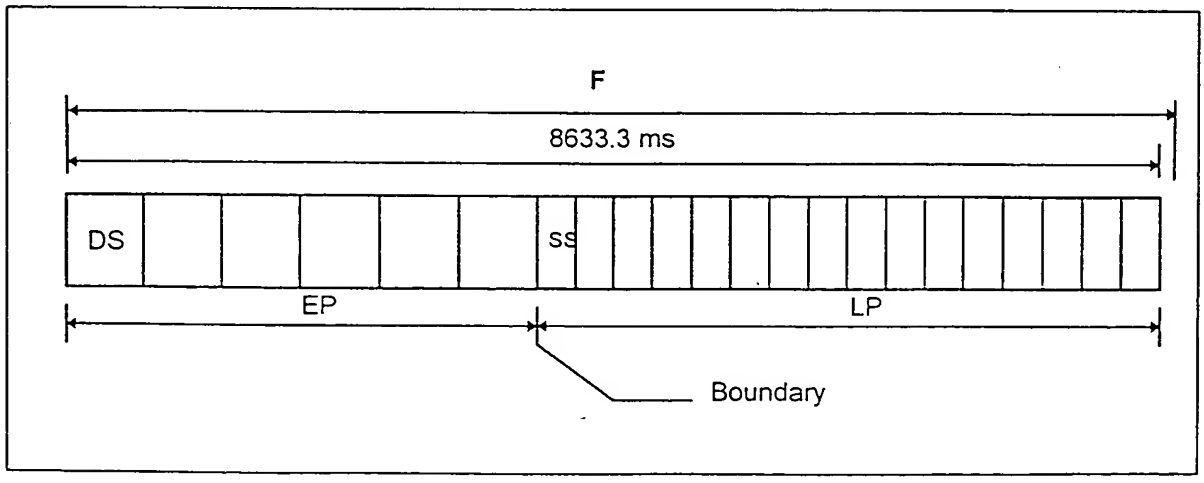

F
8633.3 ms
DS
SS
EP
LP
Boundary

Fig. 8

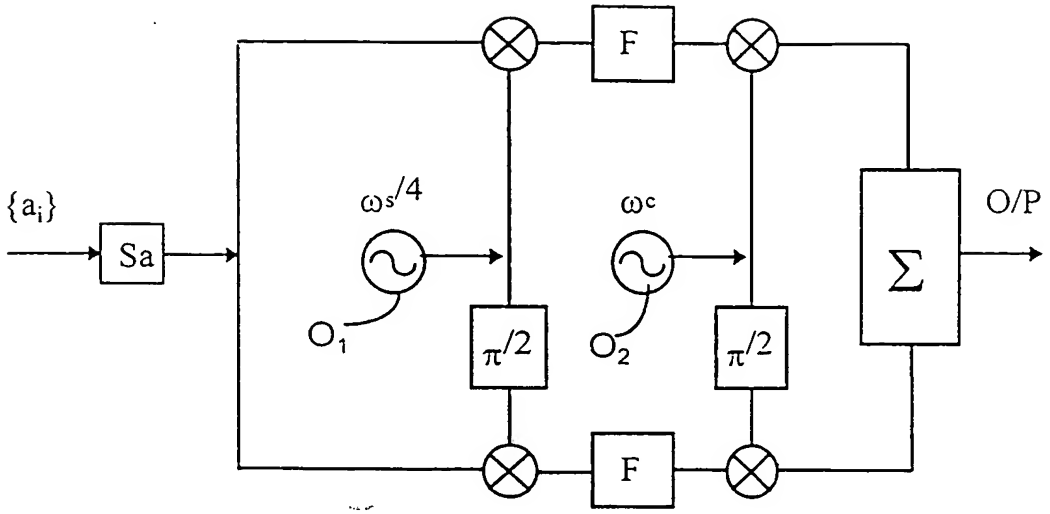

{a_i}
Sa
ω_s/4
O_1
π/2
F
ω_c
O_2
π/2
F
Σ
O/P

Fig. 9

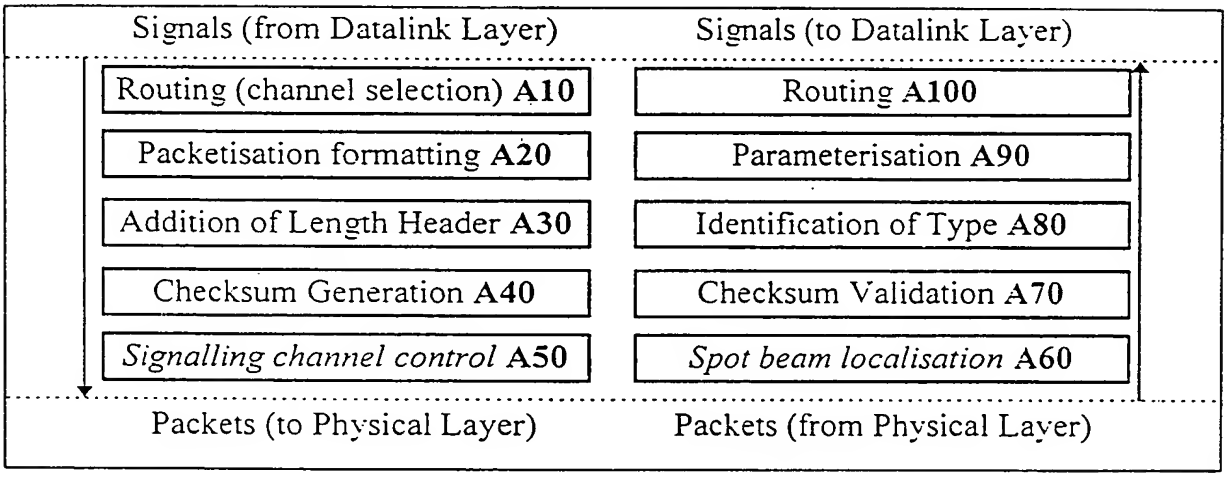
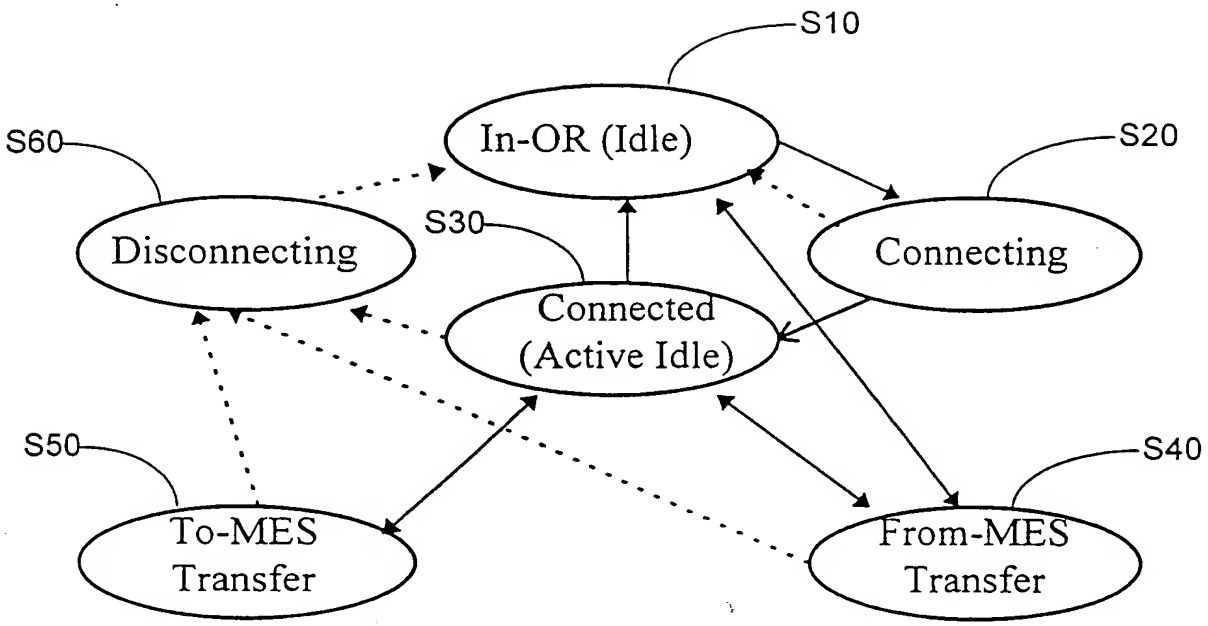

Signals (from Datalink Layer)
Signals (to Datalink Layer)
Routing (channel selection) A10
Routing A100
Packetisation formatting A20
Parameterisation A90
Addition of Length Header A30
Identification of Type A80
Checksum Generation A40
Checksum Validation A70
Signalling channel control A50
Spot beam localisation A60
Packets (to Physical Layer)
Packets (from Physical Layer)

Fig. 10


S10
In-OR (Idle)
S60
S20
Disconnecting
S30
Connecting
Connected
(Active Idle)
S50
S40
To-MES
Transfer
From-MES
Transfer